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THE U.S. STRATEGIC BOMBER FORCE

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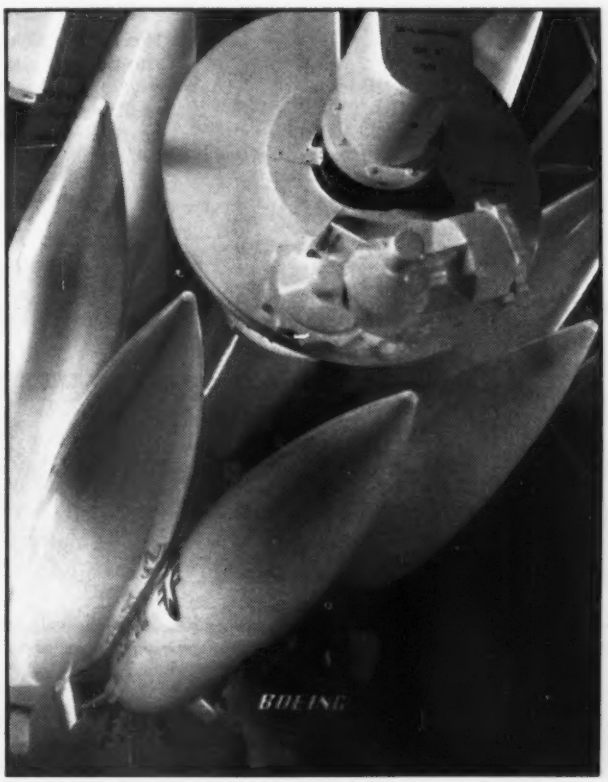
In 1960 the manned bomber was the primary element of our strategic posture; we had about 2,000 long-range bombers at that time. Upon the introduction of intercontinental ballistic missiles (ICBM) in the early 1960s, we began to phase out a significant number of these bombers until the late 1960s when bomber forces leveled off at about 500 and land and sea-based missiles at about 1,700. The U.S. bomber and tanker forces currently cost about $3 billion a year and use over 50,000 active military personnel to operate.

How do strategic bombers contribute to our future strategic posture? Some argue that the manned strategic bomber force is not needed because ballistic missiles can do the entire job required of our strategic forces. Others argue that we can build a cheaper bomber force than we currently plan equally capable of doing the job. I would like to address these arguments head-on.

We have a strategic bomber force primarily because of its contribution to credible, high confidence deterrence of a nuclear war. But in satisfying this objective, we believe the following characteristics of the bomber are essential and justify its existence in the U.S. strategic posture:

Bombers Hedge Against Missile Failure. As confident as we are about the reliability and effectiveness of current ballistic missiles, there are uncertainties which could affect our confidence about future performance, some of which are the uncertainties surrounding the pre-launch survival of ICBMs and the survivability of the communication links to our sea-launch ballistic missiles (SLBMs). In addition, you probably recall some problems we had with the reliability of the Poseidon missile. These problems are fixed now, but this is indicative of the types of unforeseen developments which could occur.

The Existence of Bombers and Missiles Complicates Soviet Attack Planning. Any time we can make a first attack more difficult or more uncertain for a potential aggressor, we enhance the deterrence of such an attack. The strategic bomber force deployed in the U.S. would raise considerable uncertainty in the minds of Soviet decision-makers if they were contemplating a strike in an attempt to disarm us, since it would be extremely difficult to mount a coordinated attack against both strategic bombers and ICBMs before they were launched. If the Soviets attempted an attack on our strategic forces with a simultaneous ICBM and SLBM launch, we could pose to the Soviets the threat of our ICBM launch upon SLBM detonations and before their ICBMs arrived. On the other hand, if they planned an attack for simultaneous impact of their weapons, then our bombers could be launched upon Soviet ICBM launch detection and before their SLBMs and ICBMs arrived.



Eight Boeing short range attack missiles (SRAMs) mounted on a rotary launcher.

Bombers Do Not Represent a Disarming First-Strike Capability. We view the strategic bomber force as a stable element of our strategic posture since it has no capability to threaten a disarming first strike on the Soviet Union. This is due primarily because of increased warning time resulting from its relatively longer time of flight to Soviet targets.

They Provide a Visible Show of Resolve. The strategic bomber force alert rate can be adjusted commensurate with the level of international crisis and tension. It can visibly show our resolve, unlike silo-based ICBMs or hidden SLBMs, without expending it and having to enter the weapon into combat.

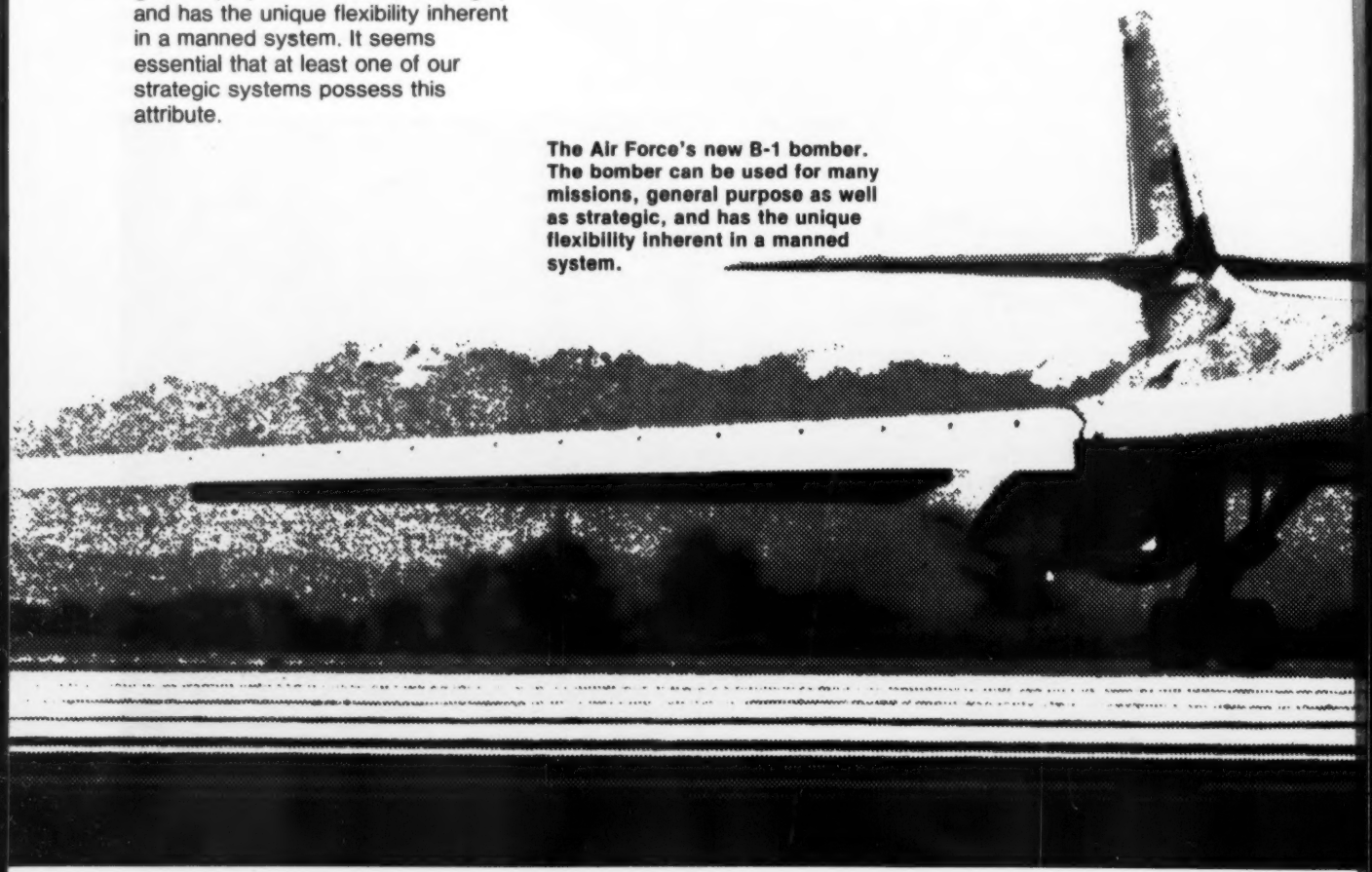
Bombers Constitute a Flexible, Multi-Purpose System. The bomber can be used for many missions, general purpose as well as strategic, and has the unique flexibility inherent in a manned system. It seems essential that at least one of our strategic systems possess this attribute.

They Are Cost-Effective. In spite of many statements to the contrary, the manned bomber force compares favorably with other strategic systems in the cost to deliver weapons on target. This is primarily because of its large payload capability which more than offsets its relatively larger cost of operations. Moreover, it costs the Soviets much more to defend against bombers than it costs us to procure and operate them.

Those who disagree with these arguments for retention of a manned bomber in the strategic arsenal and phase-out the entire bomber force, it must consider the remaining alternatives:

- We can do nothing, leaving the U.S. with approximately 1,700 ballistic missiles and the Soviet Union with 2,400 delivery vehicles under the Vladivostok Agreement. We believe this action would virtually remove any incentive for the Soviets to negotiate a follow-on agreement for reductions in strategic arms. In fact, the U.S. Congress has declared its opposition to such an inferior position through the adoption of the Jackson

The Air Force's new B-1 bomber. The bomber can be used for many missions, general purpose as well as strategic, and has the unique flexibility inherent in a manned system.



Amendment at the conclusion of Strategic Arms Limitation Talks (SALT) I. Furthermore, it would leave a very unstable situation which would permit the Soviets to concentrate their resources to defeat ballistic missiles.

• We can maintain the total number of nuclear delivery vehicles up to the 2,400 level by deployment of additional ballistic missiles. Within the provisions of Vladivostok, this can only be done with non-MIRVed (multiple independently targetable reentry vehicle) systems since the current U.S. program already approaches the MIRV limit in the early 1980s. In addition, since no additional ICBM silos can be built, these missiles must be mobile or must be placed on new nuclear submarines. Non-MIRVed missiles on new ballistic missile submarines or in another mobile configuration would be of comparable cost to a new manned bomber and of significantly less capability (one weapon on each missile versus up to 24 for each B-1).

Recognizing the unique contributions of a bomber force to our strategic posture, many of the most outspoken critics of defense spending acknowledge that there is a need to retain a strategic bomber force at a level consistent with the Vladivostok Agreement. The only major issue remaining, therefore, is what *kind* of strategic bomber.

One of the purposes of the bomber force is to hedge against ballistic missile failure. It would therefore seem illogical to design a bomber force which was dependent on ballistic missile *success* to suppress an air defense system to insure the *success* of bombers. Some critics of the B-1 have proposed that we do just that so we could use a less expensive and less capable bomber than the B-1, one alternative of which is a so-called stand-off bomber carrying long-range cruise missiles.

Moreover, we are concerned about the capability of ballistic missiles to suppress future air defenses. As you well know, the Soviet Union has a massive air defense system, including mobile air defenses. Most of their currently deployed surface to air missiles (SAMs) are either mobile or transportable, and they are now introducing additional mobile SAMs.

Furthermore, we expect this tendency to deploy advanced mobile air defenses to persist into the future, to include Soviet airborne warning and control systems (AWACS) and advanced fighter-interceptors. Therefore, we believe it is unlikely that we could use ballistic missiles to target future air defense systems with high confidence.

As the final point in this regard, even if we *could* target air defenses with ballistic missiles, our analyses have shown that:

- The effectiveness of this tactic is questionable in that the number of weapons required to suppress the defenses is larger than the number of additional bomber weapons which would penetrate, and
- The cost to put a ballistic missile weapon on a SAM site and then deliver a cruise missile to the target would be more expensive than using a penetrating B-1 carrying a short range attack missile (SRAM) to destroy the defenses or to penetrate the defenses to attack the target.

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Another point regarding the type of bomber desired is the consideration of threat sensitivity. We are estimating that a replacement aircraft for the B-52 will be operational for about 30 years from the time it first enters the operational inventory. To illustrate the length of such a life span, if the B-1 were used to drop bombs during the last days of World War II, it would be phased out this year. Since it is difficult, if not impossible, to estimate precisely how the threat to the manned bomber force will evolve during a 30-year period, we want to procure a bomber whose capability and effectiveness are as insensitive to threat variations as possible (within technical and economic constraints). An aircraft with design specifications like the B-1 meets this criterion and will help insure that we are not faced with an effective threat to our bomber force and deterrent posture between now and the early years of the next century. No other aircraft type gives us this confidence.

For the reasons I have stated, the Department of Defense advocates a bomber posture built around a flexible manned bomber, that is relatively threat insensitive, should not depend on ballistic missiles for its success, and, as a result, should have the ability to penetrate Soviet airspace to evade, defeat, or destroy the air defenses. What kind of bomber meets these criteria in the most cost-effective way—a B-52, FB-111, or the B-1? Also, do long-range cruise missiles play a significant role in the total bomber force capability?

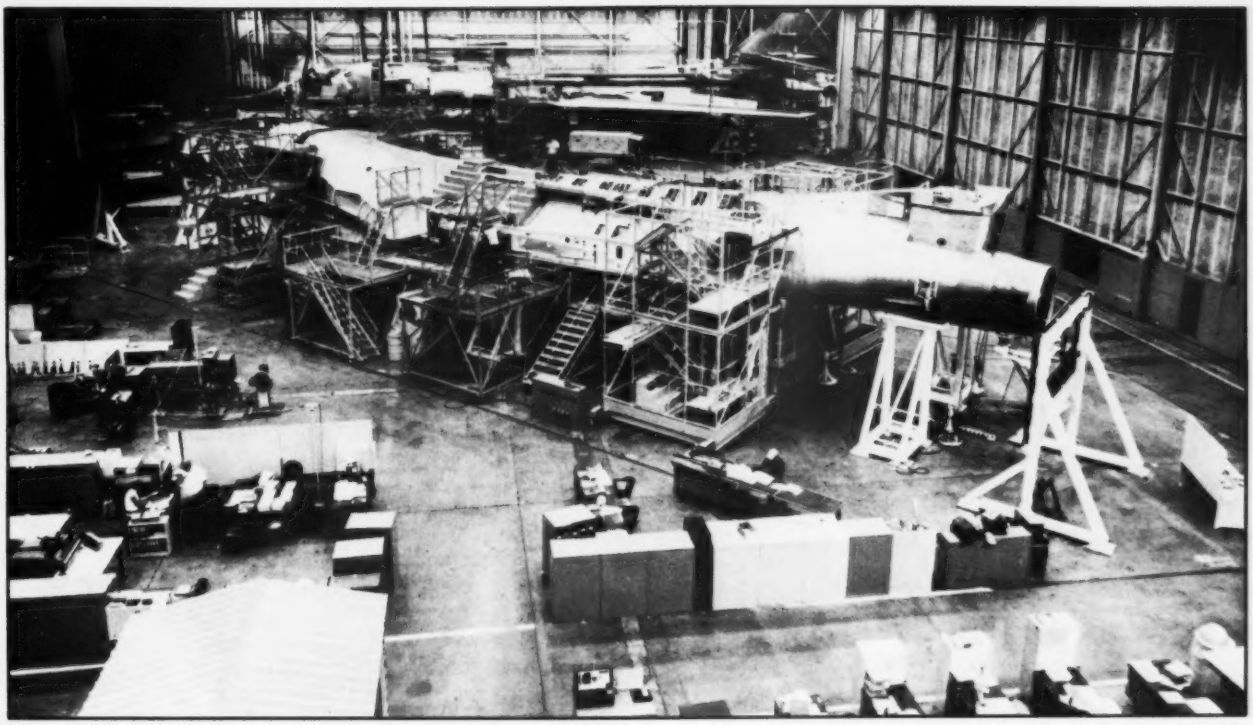
In an attempt to answer these questions, we have examined several factors which determine the effectiveness of the manned bomber:

Take-off speed and nuclear hardness were the major factors determining bomber prelaunch survivability. We found in our analysis that with a revised basing posture, an alert posture consistent with the build-up in the number of Soviet submarines off our coasts, and improvements in bomber reaction time, we could ensure that a large fraction of the alert bombers and tankers could survive a severe SLBM attack. However, the B-1 and FB-111, by being faster and harder than a B-52 or a large transport type cruise missile carrier, were least sensitive to bomber reaction time and threat uncertainties.

Radar cross section, electronic countermeasure (ECM) capability, and time in defenses were the major factors determining bomber penetration capability through area air defenses. The B-1, because of its advantage in each of these factors, and cruise missile, because of its low radar cross section, showed a significant advantage over the B-52 and FB-111 in their capability to penetrate advanced area defenses.

Weapon delivery. Our analysis has indicated that the SRAM, because of its high speed and extremely low radar cross section, can penetrate even the most sophisticated SAM defense system. The cruise missile, however, because of its lower speed and relatively higher radar cross section encourages more difficulty.

As the measure of bomber cost-effectivness we have used 10-year system costs per weapon delivered. For comparative purposes we have analyzed the cost and capability of a modified B-52 (known as the B-52I), a stretched FB-111 (known as the FB-111G), and a B-1. In terms of the 10-year system cost to deliver a weapon on a target, the B-1 and B-52 showed a significant advantage over the FB-111. The B-1 was the most cost-effective primarily because of greater penetration capability and weapon-carrying capacity, in spite of the additional costs for procurement. Only in the case where the B-1 procurement costs, not including



Three B-1 bombers take shape at the Rockwell International assembly facility at Air Force Plant 42 in Palmdale, California. The B-1 is most cost-effective primarily because of greater penetration capability and weapon-carrying capacity, in spite of additional cost for procurement.

inflation, rose by over 50 percent would the B-1 not be cost-effective.

As I indicated, our analysis has shown that the cruise missile is less effective in penetrating a low-altitude terminal SAM defense which could be deployed in the Soviet Union in the 1980s. In spite of the cruise missile's low unit cost, it would not be cost-effective to attempt to saturate or exhaust such a defense with cruise missiles or to attack the SAM site with a ballistic missile followed by a cruise missile attack. However, because such an advanced SAM defense would be very expensive, there are many targets in the Soviet Union which probably will not be defended with

Several B-52 Stratofortresses undergo maintenance and modification at the San Antonio Air Logistics Center, Kelly Air Force Base, Texas.

these types of SAMs. Against *undefended* targets, cruise missiles are cost-effective compared to B-1s or B-52s carrying SRAMs or gravity bombs.

The conclusion that we have drawn from our analyses of bomber force alternatives is that the most cost-effective bomber force, independent of the *size* of the force, has a mix of B-1s and SRAMs for penetration and attack of terminally defended targets and B-52s and cruise missiles for attack of undefended targets.

By 1985 the newest of our existing B-52s will be 22 years old and the older ones will exceed 25 years of service. It is clear that something will have to be done to that force if we are to keep it viable and effective in the 1980s. We are planning to place cruise missiles on a portion of our B-52 force, subject of course to a successful demonstration of the cruise missile concept. This plan will enhance the longevity and effectiveness of the B-52, thus delaying the time when it has to be replaced.

In summary, under the present strategic situation I believe, for the reasons stated, the Congress should support the current manned bomber force program and continue to support modernization plans, particularly the B-1 and cruise missile program. Furthermore, the advanced material buy in FY 76 should be initiated to support an FY 77 production go-ahead, subject of course to continuing successful flight demonstrations. Deferring these costs by not proceeding with the FY 76 advance material buy, and thus not adequately preparing to support an FY 77 production decision, would be a very poor investment considering the attendant increase in program costs plus the delay in obtaining the B-1 capability.

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